Scientific American.

THE ADVOCATE OF INDUSTRY, AND JOURNAL OF SCIENTIFIC, MECHANICAL AND OTHER IMPROVEMENTS.

VOLUME 6.] NEW-YORK, SEPTEMBER 13, 1851. [NUMBER 52.

THE
Scientific American,
CIRCULATION 16,000.
PUBLISHED WEEKLY
At 128 Fulton, street, N. Y., (Sun Building,)
BY MUNN & COMPANY,

A. T. Hotchkiss, Boston.
Dexter & Bro., New York City.
Weld & Co., New Orleans.
Stokes & Bro., Philadelphia.
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TERMS---$2 a-year---$1 in advance and the remainder in 6 months.

The First Inventor of Steamboats.

The Vienna correspondent of the Morning Chronicle says:—In the archives of Venice an interesting discovery has been made, from which it would appear that a Frenchman named Gautier, professor of mathematics at Nancy, and member of the Royal Society at Paris, was the first to invent navigation by steam. In the year 1756 he submitted his plan to the society of which he was a member, and it met with no countenance from that body. He then published a treatise on the subject, which attracted the attention of the Venetian Republic, and procured for him an invitation to the shore of the Adriatic; he went but death soon put an end to his labors. A year or two afterwards the theory of Gautier was practically exemplified on the Seine, amidst the acclamations of the Parisians. The treatise by Gautier on "Navigation by Fire" is the discovery alluded to above.—[Exchange.

[The Vienna correspondent of the Chronicle exhibits his entire ignorance of the subject, for Jonathan Hulls, took out a patent in England, and published a pamphlet on the subject of steam navigation in 1737—see our History of Propellers, pages 13, 14 and 15.

Patent Soap.

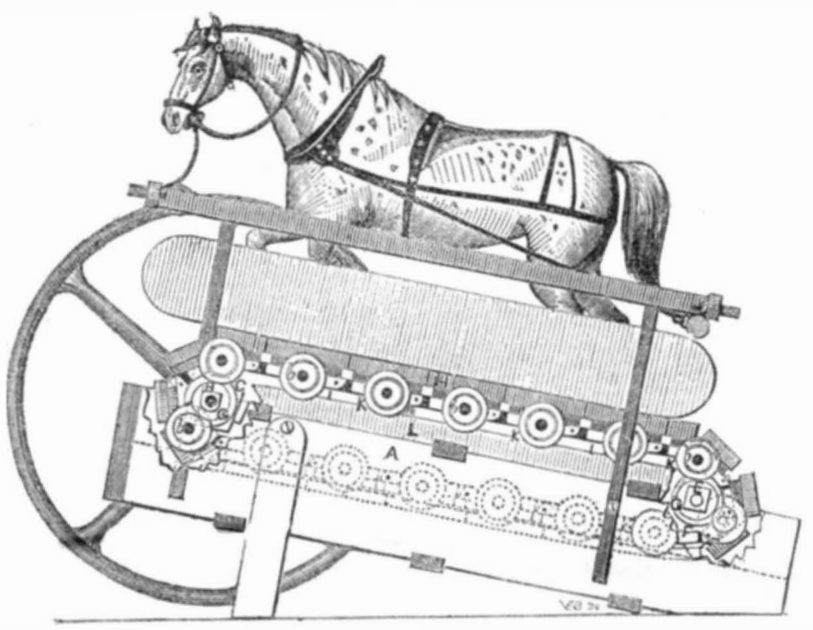
We perceive that Mr. John Ransom St. John, of this city, has secured a patent in England for what is termed an improvement in soap. It is made thus:

A soda lye is first made, in which 49 parts of lime to the 100 parts of soda are used. This makes a caustic lye of 10°. To every pound of hot lye of this strength, 6 lbs. of tallow, lard. sterine, or any oil is added, and the mixture boiled. This makes Fuller's soap. To every 100 parts of this soap made hot, add 50 lbs. of common whiting or the silicate of magnesia mixed with 15 gallons of water. The whole is then boiled and 12 pounds of resin is added and stirred until the union is completed, but not allowed to boil. 14 lbs. of of soda crystals are then added, and 2 lbs. of borax. A mixture of 3 lbs of starch may now be added, and all stirred with a good heat and until fully dissolved and mixed together. A trial of the contents of the soap kettle may now be made, and if the sample, when placed in a shallow vessel, quickly hardens and sets, the contents are run off into moulds. The borax is a new and good feature, but a somewhat expensive one in this soap, and the whiting, however good for hardening, and adding to the weight, does not add to its detergent quality by any means.

A Geological Curiosity.

Mr. James Robinson, of New Bedford, Mass. recentlydiscovered in Fairhaven, near the fort, a large stone of very remarkable formation, specimens of which he has sent to several distinguished geologists. Professor Hitchcock, of Amherst, says the rock is coarse phorphyritic granite. It contains large and perfect crystals of feldspar, a portion of which is graphic granite, which is remarkable.

AVERY'S PATENT PLATFORM HORSE-POWER..---Fig. 1.

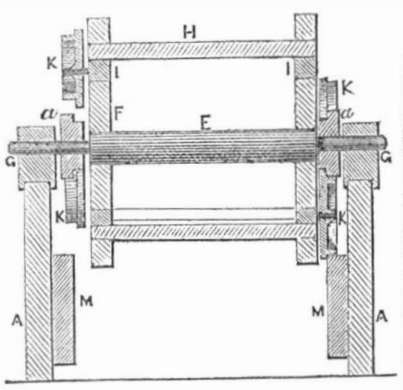


The accompanying engravings represent an Improved Horse Power, invented by Mr. Cyrus Avery, of Tunkhannock, Wyoming Co., Pa., and for which a patent was secured on the 1st day of last June.

Figure 1 is a side elevation, the frame being broken away round the axles to show the improved parts. Figure 2 is a transverse section. The same letters refer to like parts.

A is the frame; B is the main shaft hung in suitable bearings on the frame, and having two toothed chain wheels, C C, and a fly wheel fast upon it; E is the lower guide shaft having two plain wheels, F F, fast upon it; G G are rollers fitted so as to turn easily on the shafts B and E, outside of the wheels, C and F, close to the sides of the frame; H is the platform which is secured in the common way to the links of the endless chain, I I, which have recesses on one side fitting to the teeth of the wheels, C C, on the driving shaft B, and they also run on the plain wheels, F F, on the guide shaft, E. The links of the end-

Fig. 2.



less chain are made of cast iron, united by knuckle joints, and, in every alternate link a wrought iron pin, *b*, is placed standing out from the outside of the link, the requisite distance form the axle of one of the rollers, K, which supports the platform; thus the axles of the rollers form parts of the links; L are the top guide rails on which the rollers, K K, run on that part of the platform above the shafts. The lower guide rails on which the rollers run are on that part of the platform below the shafts. While the platform is in motion the wheels, K K, move from the upper guide rail, L, to the lower one, or vice versa, when their direction is reversed. The common way of guiding them around the shafts, B and E, is by curved stationary ways secured to the inside of the frame. As they travel round the ways, their revolution is suddenly stopped and their direction reversed, and as they acquire a great impetus when in rapid motion, considerable power is lost in thus suddenly reversing them. This disadvantage is overcome by the rollers, G G, on the flanges of which the wheels, K K, run as they pass around from one guide rail to the other, their flanges entering the recesses at the side of the flanges, *a a*, on the rollers. As soon as a wheel comes in contact with one of the rollers, its motion is transmitted to the roller, which commences moving round the shaft on which it is mounted, and the revolution of the wheel stops almost instantaneously, consequently, when it reaches the opposite rail to that which it has left, it will run freely. The rollers, G G, being flanged, keep the wheels, K K, from slipping off their axles without the aid of linch pins or nuts. Great saving is effected in the construction, as the weight of the rollers is not much, whereas the ways commonly employed are of considerable weight; considerable work is saved in casting the chains with the wrought iron axles, *b b*, of the wheels, K, K, the axles being inserted in the mould and the metal poured around them.

The claim is for the combination of the rollers, G G, as arranged, with the flanches on the wheels, K L, for the purpose stated.

More information about this useful improvement, such as the sale of rights, &c, may be obtained by letter addressed to the patentee according to the above direction.

LIST OF PATENT CLAIMS
Issued from the United States Patent Office.
FOR THE WEEK ENDING SEPTEMBER 2, 1851.

To S. S. Young, (assignor to J. R. Stephen), of Eaton, O., for improvement in Rules for Calculating Machine.

I claim the arrangement of parallel slides, substantially in the manner set forth, one slider being for units, another for tens, another for hundreds, &c., and each slider being so graduated and numbered as to show through the vertical opening, the same denoting the interest or tax on the numeral figure that appears on the same slider, at the side of the bar, as described.

To T. M. Chapman, of Old Town, Me., for improved Saw-Filing Machine.

I claim the swinging frame constructed as described, viz., by having the arms firmly attached to a rod, the ends of the said rod working freely in holes or bearings in the arms, which are attached to the horizontal rod, C, by which arrangement the swing frame has an up and down motion, owing to the rod, C, turning in its bearings; also a horizontal reciprocating motion, the same as the rod C, and a forward and backward motion, by which. with the aid of the file turning on its axis in the frame, the file may be so adjusted, as to operate both upon the front and back of the saw teeth, substantially as set forth,

[This is an excellent invention, and we hope to be able to present an engraving of it in our columns.]

To Junius Foster of Green Point, N. Y. & David Marsh, of Bridgeport, Conn., (assignor to Junius Foster, of Green Point), for improvement in method of securing Wheels to Axles.

We do not claim the securing of a hub to an axle by means of a groove around the inner end of the hub or a bead on the axle, but we claim the application of the cylinder, 5, and flanch F on the axle, in combination with the cylinder E, flanch 3, couplings, 7, keys 12, and coupling box G, to retain the plate D, of the hub, and allow its rotation between the flanches 3 and F, without any tendency to uncouple the hub from the axle, substantially as described.

To Conrad Harris & P.W. Zoiner, of Cincinnati, Ohio, for improvement in Double Oven Stoves.

We claim the damper constructed and arranged as described, so that one or both ovens may be used at pleasure.

We also claim the flue between the ovens, substantially as constructed and arranged, to communicate directly with the exit flue.

We also claim projecting the cold air chamber into the flue under the fire place, and there discharging the received air, so as to protect the oven from being over heated at that point.

To Charles Hobbs, of New York, N. Y., for improvement in Moulding and Casting Stereotype Plates.

I claim, first, the moulding, in plaster, of one or more forms of type, wood cuts, medals, &c., at one operation, in air-tight vessels, by means of exhaustion.

Second, I claim the making of the plaster moulds with two faces.

Third, I also claim the casting from one or more moulds, in a box sufficiently tight to hold fluid metal and bringing the face perfect by means of the weight of fluid metal confined above them, in column or otherwise.

Fourth, I also claim the grooved wedges for retaining the moulds in their places while casting from them.

Fifth, I also claim the non-admission of fluid metal to the moulds, until the orifice through which it enters is sunk beneath the surface of the fluid metal, thus preventing the dirt and dross from entering with it.

To J. C. Kempton, of Manayunk, Pa., for improvement in Drying and Oxidizing Colored Goods.

I claim the application of atmospheric pressure, or the mechanical pressure of air, in the coloring of cotton, wool, or other substance for removing the excess of liquor, absorbed from the vat, and for oxidizing or fixing the color, by its forced passage throughout the mass, and by the use of apparatus, substantially as described.

To John Moulson, of Philadelphia, Pa., for improvement in Mercury Baths for Photographic Purposes.

I claim the agitation of the mercury upon a cooler surface, immediately previous to its use in the heated cup, for the developement of photographic impressions by means of my movable lever cup or its equivalent.

I claim the lever cup, or elongated cup, movable perpendicularly on an axis, or centre of motion, which centre of motion need not be confined to a particular part of the cup, but it may be varied and placed in any manner, giving and admitting the movement of the cup, but must be so arranged as that the mercury or other substance may flow from the heated surface of the cup to the cooler surface of the tube or elongated cup, and vice versa, by elevating or depressing the exterior end of said cup.

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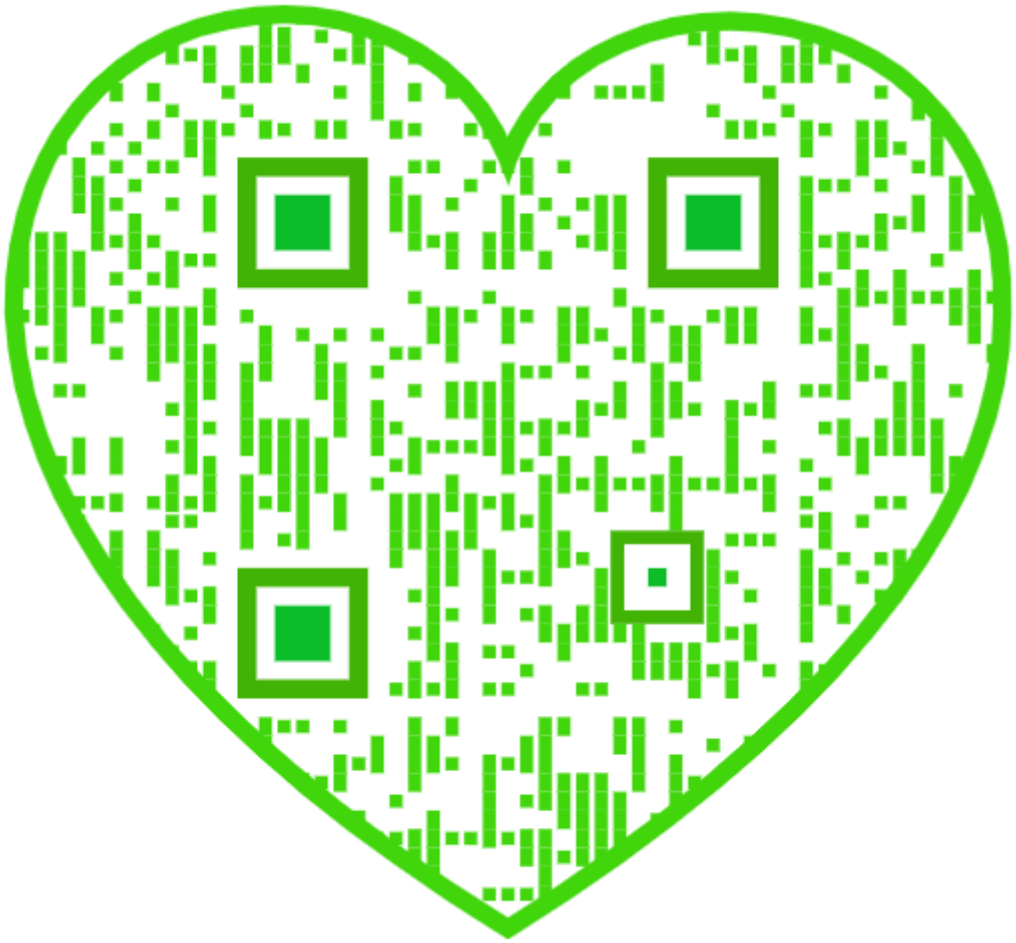


I claim the balancing of said lever cup, or its equivalent, on the centre of motion, wherever placed, so that it will remain stationary when the weight of the mercury or other substance is let on to either end of it, that end containing the mercury or other substance used being held down.

To Wm. Irwin, of Philadelphia, Pa., for improvements in Method of Raising Sunken Vessels.

I claim the combination of the inflatable air receiver, purchase, roller, and wedge, or their equivalents, as described, for the purpose of raising and supporting vessels.

To Edwin Stanley, of Bennington, N. Y., for improvement in the construction of Bridges.

I claim the method of making the thrust arches of bridges, that is to say, I claim the arch constructed partly of wood and partly of iron, when arranged in the manner set forth, the iron parts of the arch being constructed in such a manner as to afford a firm bearing for the braces and uprights with a projecting flanch of a sufficient wooden part of the arch as set forth, and the wood being bolted upon the sides under cover of the flanches of the iron, in such a manner that the wood upon one side can be removed and replaced without disturbing that on the other, the whole being constructed and put together substantially in the manner set forth.

To W. B. Tilton, of Carrollton, Ala., of Improvement in the Construction of Violins, etc.

I claim the introduction into the body of the instrument of the brace, or supporter constructed of any suitable material, and of any requisite form, between the upper and lower extremities thereof, either inserted into blocks of wood, or introduced into an elongation of the neck to answer the same purpose. I am enabled to give strength to the instrument, to resist the strain of the strings, and disconnect the sound board, and table or back from the blocks, said brace or supporter sustaining the tension of the strings, preserving the tone in quality, volume, and melody of instruments to which this improvement is applicable.

I also claim the manner of increasing the vibration of the sound board and the table or back by the cutting away or removing the before described portions, in the manner and for the purpose set forth.

To Nathan Chapin, of Syracuse, N. Y., for improvement in Cider Mills.

I claim the cast iron grinders, arranged and constructed as described, viz., so as to force the apples while being crushed from the centre towards the periphery of the plates, and at the same time to force a portion of the pumice through the holes in the lower plate of the grinders.

I also claim the method of removing the cheese of pumice from the press crib, viz., by detaching the platform from the press crib and using the same for a sled to draw the cheese from the mill, substantially as described.

To C. S. Bulkley, of Macon, Ga., for improvement in Circuit Changes of Electro-Magnetic Telegraphs

I claim the circuit changer, substantially as above described, in combination with the arrangement of wires, magnets, &c., as set forth, for the purpose of enabling the operator, at either one of the two distant stations, to arrange the connections at intermediate stations, so that he can write through to the other end station at pleasure.

ADDITIONAL IMPROVEMENT.

To Frederick Pfanner, of Providence, R. I., for improvement in preparation of Dye-stuff from Spent Madder. Original patent dated Sept. 13, 1845.

I claim the dispensing with the washing of the spent madder in the first place, and the drying and pulverizing it, after it has passed through the other process, and substituting drawing or pressing instead.

DESIGNS.

To Calvin Fulton, of Rochester, N. Y., for Design for Stove Plates.

To P. M. Hutton, of Troy, N. Y., for Design for Cast-iron Bedstead.

To D. A. W. James, of New York, N. Y., for Design for Stoves.

To S. H. Sailor, of Kensington, Pa. (assignor to North, Harrison & Chase, of Philadelphia, Pa., for Designs for Stoves.

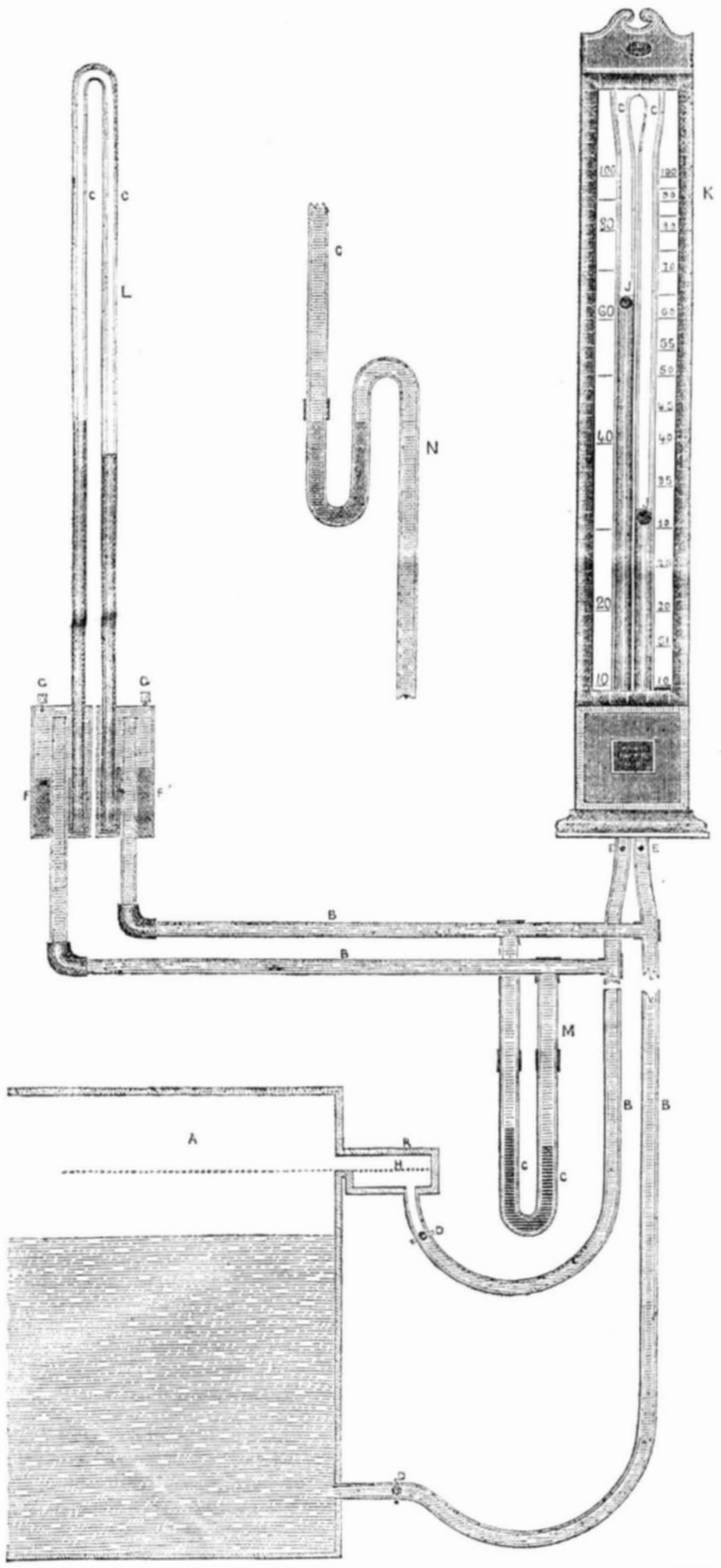
To Silas Merchant, of Cleveland, O., for Design for Stoves.

To James Hutchinson, of Troy, N. Y., (assignor to Deborah Powers, A. E. & N. B. Powers, of Lanin burgh, Pa.,) for Design for Floor Oil Cloths.

Improvement in the Safety Lamp.

Mr. Goldsworthy Gurney, the gentleman who, about two months ago, so ingeniously extinguished, by steam, the subterranean fire in the colliery of the Earl of Mansfield, near Alloa, in Scotland, has suggested the employment of burnished silver wire gauze, in place of iron wire gauze, now used in safety lamps. It is well known that the safety lamp gives a poor light, owing to the wire gauze absorbing and obstructing the rays, there can be no doubt but the lamp is susceptible of great improvements in this respect, and we consider the suggestion of Mr. Gurney as one of no small importance, and one which we hope our miners will pay some attention to.

IMPROVED STEAM AND WATER SYPHON INDICATOR.



The accompanying engravings represent ansame, through these the air escapes, as they are filled with a denser fluid; H is the water improvement in Indicators for steam boilers, invented by Mr. Wm. C. Grimes, of Philadelphia, who has taken measures to secure a patent, and who, having one in use, successfully, for about one year, thus brings it before the public. The figures represent several forms of the Syphon Indicator, with one in section. The same letters refer to like parts.

A is the boiler; B B are metallic tubes or limbs of the syphon; C C is a glass tube in which the different fluids meet; D D are stop cocks; E E are small screws closing apertures in the metallic tubes; these are to allow the air to escape, as the tube fills with water or other fluid; F F are reservoirs; G G are small screws closing apertures in the tops of the line in the boiler; K, L, M and N are different forms of the syphon indicator; K is a front elevation of a finished instrument; J J are black or high colored glass floats to render more visible the surface of the transparent fluid columns in the syphon. An elastic fluid fills the space above the floats.

This instrument shows the height of the water and the pressure of the steam. As the balls on the floats, diverge or approach, in the same degree does the water fall or rise in the boiler. The pressure of the steam is shown by the intermediate point between, or mean elevation of the floats, on columns of the heavier fluid, be that more or less.

The indicator represented in section at L, is similar to that at K, except that a denser fluid is used in connection with the elastic one, rendering floats unnecessary.

In the form shown at M, non-elastic fluids only are used, the glass is an inverted syphon with a dense fluid in the bend. At N, a dense fluid lies in a lock or bend of the metallic tube; the glass tube above R, is a reservoir of water attached to, and open into the boiler and forms a part of the syphon.

To have the means of knowing the height of the water in boilers, and pressure of the steam is of the first importance to those in charge of them. Various devices have been brought forward to do this, but try cocks and the weighted valve are still in almost universal use. Intelligent engineeers are aware however, of their defects, and the liability of the valve to magnetic adhesion, and its not showing the varying pressure of steam except by personal manipulation, and then imperfectly. The try cocks rarely ever give the exact position of the water, and often indeed deceive; to these may be added their limited verge of position. To obviate these defects is the object of this invention. It is an instrument requiring no personal manipulation; its indications are manifest to the eye by the movement of different fluids in a glass tube, while the range of its position, in respect to the boiler, is susceptible of giving to all exposed, timely warning of dangers.

This improvement consists in the use of a syphon for showing the height of the water and the pressure of the steam (singly or severally) at any elevation above, depth below or distance from the boiler. It is formed with locks, bends, or reservoirs in its limbs, and filled with fluids of different specific gravities; and at the desired point where different fluids meet, it is formed of glass.

The principle upon which this instrument acts, lies in the antagonistic action of the fluids in the syphon, one tending to flow through, the other to remain; an inevitable result of such fluids when in a syphon, and it in a position to act.

Hence if the meeting point of the fluids is in a glass tube, the degree of force may be seen and measured by the extent of movement, or change of place in the meeting point of those fluids.

When the water in the fountains, to which are attached the legs of the syphon, is on the same level, then the fluids in the bottom are in equilibrio, but when one of the fountains falls below the other, an action commences in the syphon and the meeting point of the fluids will depend upon their relative weight, or specific gravity.

If the resisting or antagonistic fluid is thirteen times as heavy as water, then its change of position will be about one-twelfth part as much as the fall of water in the boiler. If twice as heavy, then its change is about two-thirds as much.

If light as atmospheric air, its change is nearly the same as the fall of water in the boiler. In point of fact the heaviest is always the antagonistic fluid.

When a fluid heavier than water is used, an inverted bend or reservoir is made in or near the glass to contain it.

And when one of the fluids is elastic, then the effect of steam pressure upon it, may be seen as is the rise and fall of water in the boiler.

We have placed the description of the figures first, so that a good idea of its mechanical construction may be first obtained, after which its scientific principles of action will at once be appreciated.

More information about this useful improvement may be obtained by letter addressed to the inventor.

To Correspondents--Our Index, &c.

We have a number of communications on hand which will receive attention in due season. Our index renders the Sci. Am. very useful for ready references to the articles published. The list of claims which are published officially every week is of manifest importance to inventors. Other periodicals always copy from us. The first official news of an invention being patented, is obtained in our columns.

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Scientific American

NEW YORK, SEPTEMBER 13, 1851.

To Our Subscribers---End of Volume Six.

This number completes our Sixth Volume, and to you, our subscribers, we return our sincere thanks for the support you have given us, and the kindly feeling manifested in the prosperity of the Scientific American. As friends of American science, and the rights of inventors, many of you have greatly interested yourselves to promote our circulation by soliciting others to become subscribers. From small beginnings, six years ago, the Scientific American has attained to a very honorable position in point of circulation, and consequent influence and usefulness. Our constant readers can give testimony to a great improvement in public taste for useful information within the past few years, and we have received many congratulations for having labored so diligently to cultivate and promote it. Our object and aims have been to spread abroad useful and practical information in clear and simple language. We have always kept free from party influences, and have been always independent, to speak without fear or favor upon every question. Truth has been the object of all our discussions, and we have spoken it, untrammelled with any other influence than the golden value of truth itself. We never stand neutral, and we claim no immunity from criticism, but we do not descend to meet every one who may choose to attack, and never will; we bide our time.

We will still continue to pursue "the even tenor of our way," but with greater diligence, in the dissemination of useful knowledge, for every increase of circulation increases our responsibility. The Scientific American is the best illustrated mechanical paper in the world, and it contains more useful information than any other. We have always added improvement to improvement during the past six years, and we will continue to do so. Our next volume will be printed with new type, and on heavier and more beautiful paper. We will continue to improve in good engravings and the number of them. We have able correspondents, and men of high standing in the scientific world, frequently contribute to our columns.

The articles on Electrotyping and Water Wheels, in this volume, are worth more than the whole price of subscription. We hope for a great addition of new subscribers to next volume, for it will be the best we have ever published. Our paper is the Repertory of American inventions, discoveries, and improvements in the useful arts; it is an Encyclopedia of Progressive Science. No man can spend two dollars to better advantage than by subscribing for it, for we are positive that there is no man, no matter what his business or profession is, but will find something in it, which he can find no where else, and which will be of more worth to him than the price of his subscription. We have sources of information of a peculiar character, and we make this statement without hesitation, for we know it to be true. Although our subscription list is very respectable, we have a population which should give us one five times larger, and by doing so, our people and country would certainly be gainers, for our paper is a standard work, and can always be used for reference.

Some Poisons and their Antidotes.

The effect which some metals in an oxidized state, have upon the human body is very singular.

Gold and silver in a pure state may be taken into the stomach without producing any injurious effect, but a single grain of white arsenic will soon curdle the life blood and lay low in death the stoutest of men. Many other substances, as well as arsenic produce as fatal results.

The effect of "animal poisons" upon the human frame, has been known from all ages but the reason why the tiny drop ejected from the fang of the snake, or the bite of the scorpion, produces such tremendous effects upon the whole system is not well known; how true it is, "man is crushed before the moth." The effect of poisons taken inwardly has also been known from the earliest ages, and a common method of putting victims to death in Greece was by the poisoned bowl. The wise Socrates fell a victim to this kind of death.

At an early age the alchymists devoted as much time to the discovery of antidotes for poisons, as they did to discover the philosopher's stone. All the knowledge derived from them, however, respecting this branch of chemical science is of scarcely any worth whatever. Chemistry is a modern science in every respect, and in no one instance more than the investigations of such men as Christisson into the nature of poisons. The virulence of any poison is known only by experiment. Poisons are soluble, that is, they pass into the blood and injuriously affect the functions of life. The object of the chemist to render poison inert, is to make it insoluble, when it will pass away and escape without producing any deleterious effect.

To do this in the stomach is to administer an antidote which will meet every condition of the human system.

There is an acid used in many houses for removing stains from furniture and clothes, and for cleaning brass, named "oxalic acid;" it greatly resembles common salts, and has been oftentimes taken for them by mistake. If this poison is taken into the stomach it will be rendered inert by speedily drinking down a quantity of magnesia or lime water. Another poison is corrosive sublimate which is also used in families for destroying bedbugs; if this is taken by children or others by mistake, the remedy is to swallow as quick as possible, the white of eggs, and if these are not convenient, some pearl ash and dissolved glue. Of these facts every person should be informed. These substances combine with the poison in the stomach and form an insoluble inert compound.

Hydrated protoxide of iron, which can be purchased at the druggists, if quickly administered is an antidote against white arsenic; and sulphuric acid is an antidote for lead. There are many poisons however, for which no human hand has a remedy, because their action is so rapid upon the well springs of life. But some more ought to be said about "lead poison," as it is a very extensive harm doer. Painters colic is caused by drinking waters impregnated with lead in mines, or by the metal being introduced into the system by inhaling lead dust. The metal is soluble when introduced into the body, and is the cause of many acute pains. Sulphuretted waters, or weak sulphuric acid and water, renders lead insoluble, and has therefore been prescribed as a remedy for this disease. But it has been found that the lead, though rendered inert by being insoluble is still diffused through the body, ready when some favorable condition arises to act injuriously again. It was discovered, not long ago, that the iodide of potassium is capable of dissolving the compounds of lead, or rather in bringing it to a new condition whereby it becomes soluble and can be washed away.

If a person be poisoned with lead, the system struggles to throw it off through his kidneys, and it can be detected in the urine. The remedy is to give sulphuric acid in water, in strength, a little sour, when the pain will disappear, but the lead remains in the system. Then give a dose of iodide of potassium and slight pains return, but the lead will be disappearing in the secretions. By repeated small doses of sulphuric acid and water, and the iodide of pottassium in small doses, at some intervals afterwards, the lead is effectually driven from the system.

This iodide of potassium has the same influence in driving mercury from the system, and is one of the grandest discoveries of modern times in medical chemistry. The test for the entire removal of lead from the system is, when a pretty large dose of the iodide causes no acute pains.

Hon. Levi Woodbury expired at his residence in Portsmouth, N. H., on the 5th inst., aged 61 years. At the time of his death he was one of the Judges of the United States Supreme Court, which position he filled with much ability. From an early period, and until the close of his career, he has occupied high places of public trust—discharging his duty in an able and praiseworthy manner. He was justly esteemed one of the most distinguished of American statesmen.

Short Conversations on Mechanics.--No. 6.
(Concluded.)

Q. "I promised last week to present some reasons, why centrifugal force was 'property of matter, an independent law of nature.'"

A. Come to the point at once and tell me what centrifugal force is?

Q. "Well, all I know about it is, that it is said to be a property of *matter exhibiting* itself under the condition of rotation and not chargeable upon the power applied to cause the rotation."

A. Well you do not know, I see, what centrifugal force is. All the men who have learned the science of mechanics know what it is, you do not know where it comes from, nor whither it goeth. Centrifugal force is not an independent force, it is just a name for a certain action of matter derived from another force, the same as if I said "grain is threshed by a horse power machine," it is true the machine threshes the grain, but there is no independent power in the machine, that independent power is in the horse. There is no law better understood by mathematicians than that "all bodies have a tendency when impressed with dynamic force to move in a straight line, and when bent out of the straight line by another force, their tendency to move in a straight line is not destroyed, but is still exhibited, and is named 'centrifugal force,' not because of its original nature, but its direction from the centre; in other words, it is truly the inertia of the body, that quality by which all bodies, when impressed with a force which sets them in motion, persevere forever in a straight line. Now let me nullify all that you have said about it to the contrary; you say it is a property of matter, an independent law of nature and exhibits itself under the condition of rotation."

Q. "Yes."

A. Well, rotation in plain English, means a body revolving round some centre.

Q. "That is what I mean."

A. Very well. Is it exhibited in a body which does not rotate, and in a body which does not move at all?"

Q. "No."

A. Has a vibratory pendulum a rotation.?

Q. "No."

A. Is centrifugal force exhibited by a pendulum?

Q. "I believe it is."

A. That is right, hence it is exhibited under more conditions than *under rotation*.—Does a wheel exhibit rotary motion when standing still?

Q. "No."

A. Will it move of itself?

Q. "No."

A. What will set it in motion?

Q. "An extraneous or applied force."

A. Does it exhibit centrifugal force when it is in motion?

Q. "Yes."

A. When will the wheel stop?

Q. "When the applied force is withheld."

A. That is right, hence, as the wheel cannot move without an applied force, and stops when the applied force is withheld, and as centrifugal force is not exhibited but when the wheel is moved by the applied force, it cannot be an *independent force*, but is in essence and principle dependant on the applied force, for it cannot exist without it; in short, it is the applied force, seeking its right line of direction; centrifugal force then is not an independent force and is exhibited under more conditions than under rotation.

Q. "Well, I see it is, but then it increases with the square of the velocity, and the applied force does not, consequently it must be an independent force and a tremendous force it is, for it often breaks machinery to pieces, yet it is no tax on rotation."

A. It is singular how it can break machinery, and yet be no tax on rotation—the machinery in that case must have cost nothing, like your centrifugal force. So far as it relates to an increase of force according to the square of the velocity it perfectly agrees with the applied force according to the unit of measure applied to falling bodies, as I explained to you last week, and by which centrifugal action is always measured. A body moving with a double velocity has four times the *vis viva*, or living force of one moving with a single velocity, it is measured by $W \times v^2$. The centrifugal force of the cog wheel gearing which meets with an equal resistance at every new point of action is measured by $W \times v$, and this reconciles the whole theory, and it is thus understood by intelligent engineers. I know that there are some men who cannot appreciate this simple and harmonious law, for there are people who are as difficult to teach as grindstones. Many, somewhat smart men too, are quite satisfied with such arguments as "a cheese is round, the moon is round, therefore the moon must be a cheese;" I hope you are not one of these.

Q. "I hope not."

A. You will never go wrong if you make the following axiom the basis of your mechanical reasonings, viz., "action and re-action are equal." It was by the use of this simple base line that D'Alembert resolved some of the most difficult and beautiful geometrical problems in his "Traite d'Dynamique." If it were otherwise, mathematics and geometry would be no better than old wives fables.

Paines Atmosphheric Light Patent.

"The Intelligencer denies, by authority, that any patent is about being issued for Paine's new light, or likely to be, his publication to the contrary notwithstanding."

The above notice appears among the telegraphic items published in the daily papers on the 5th inst. We should really like to know by whose authority such a statement was made—if by any one connected with the Patent Office a vacancy ought to be created instanter, and some one worthy of confidence placed instead. We have learned upon authority, that Mr. Paine's application is still pending before the Office, and that it is his intention not to withdraw.

Now we contend that the officers connected with the Patent Office would be guilty of a gross dereliction of duty by making public any decision where the applicant is unwilling to submit to it, without availing himself of *all* the priviliges of reconsideration of his claims, or an appeal from the Commissioner's decision. The decisions made by the Patent Office Examiners are many times of doubtful character, and we know that Mr. Paine feels dissatisfied with the one rendered in his case. Now the publication "upon authority" of such a statement must necessarily be understood to seal the action of the office against him in this application. Mr. Paine has said a great number of things which were in our opinion erroneous, but that is not to say but he may invent something new and very useful. Give every man fair play say we, and if he can show by experiment that he has discovered a new method—an improvement in gas light, or any art, he is entitled to a patent.

Literary Agency.

M. Boullemet, Esq., for many years proprietor of the Mobile Literary Depot, is about establishing a general local agency, for publishers in the city of New Orleans. He will also continue his agency in Mobile. Mr. Boullemet has for a long time been our sole agent in the latter city, and we take much pleasure in recommending him as a gentlemen, prompt and efficient, and in every way worthy the confidence of book and newspaper publishers

Substitute for Hops in Making Beer.

A communication has been presented to the Paris Academy of Sciences, by M. Dumfulin, relating to the use of picric acid as a substitute for hops in making beer. Four grains of picric acid are sufficient for twenty-two gallons of beer. The fermentation was conducted with great regularity, and a sample of the beer was sent to the Academy. Hops, we suppose, are cheaper than the acid in this country.

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Ozone.

Prof. Farady has gone far to demonstrate that Schoenbein's ozone is not a peroxide of hydrogen but merely an allotropic form of oxygen. It is best obtained by placing a piece of phosphorous half covered with water in a two quart bottle loosely stopped. In five or six hours the process is complete, when the phosphorous and water may be removed and the ozone left for experiments. The test for ozone is a mixture of one part iodide potassium, 10 of starch, 200 of water boiled together for a few minutes and then spread upon paper. In an ozonized atmosphere it instantly turns blue from the liberation of iodine.—Ozone differs from oxygen in the ordinary state by its far higher power, acting rapidly upon lead and even silver and discharging vegetable colors.

To Remove Stains from Mourning Dresses.

Boil a handful of fig leaves in two quarts of water until reduced to a pint. Bombazines, crape, cloth, &c., need only be rubbed with a sponge dipped in this liquor, and the effect will be instantaneously produced.—[Exchange.

Beware of using the above, for it cannot remove a single stain, and those who rub crape with a sponge, will find to their cost, that they have spoiled its dress and finish completely.

There are two kinds of stains on mourning dresses, and black colored goods which are entirely different, the one is dirt such as grease, &c., the other is the discharge of color. The latter is easily distinguished because it presents a yellow burned look. Sometimes a little ammonia will restore the color, that is, if it has been discharged by a weak acid, but generally, nothing will do but re dye. Grease and dirt can only be removed by washing, a little alcohol will remove a faint grease spot, and this is a very safe remedy.

Inverted Locomotion.

Some interest has been excited in Pittsburg by the performance of a Mr. McCormick, who walks head downwards, on (or rather under) a slab of polished marble, to which his feet attach themselves, as he asserts by atmospheric pressure. He made some six or seven steps, the slab being only nine feet long. This experiment is said to be the result of many years of research and labor, and involving philosophical principles.—[Ex.

[This is a tough story, and the philosophical principles involved, must be of that sort denominated philosophy *falsely so called*.

American Yachts.

The yacht America has beat all the yachts of the Royal Squadron and every other squadron in England with the greatest ease. This must mortify the pride of that nautical nation.

Fire Annihilator.

We shall publish engravings and a full specification of this invention next week. It is now in the hands of some of the richest capitalists in our country, and will soon be before the public for general introduction. Our remarks will be freely and impartially given. If it is all that is said about it, insurance companies will not be long in existence, and fire companies will soon be disbanded. If not, it is one of the greatest schemes ever got up in our country to make money out of the public. We shall give it our attention.

"Behold They Come."

Since the new prospectus for volume 7 was first published in the Scientific American, (two weeks ago) over 6,000 new and old subscribers have manifested their wish to become patrons to the next volume, (commencing next week) and remitted their money in advance, according to the advertised terms.

Taking the success we have been favored with for the last two weeks, for a criterion, we may confidently expect over 20,000 patrons to our new volume, which will encourage us to bestow far greater expense in the editorial and engraving department of the paper than we have ever before been able to do.

Come, Inventors and Mechanics, send in your names, and get your fellow mechanics and neighbors to remit with you. The more we have to feed, the better fare we will serve you.

Scientific American for Binding.

As this number closes volume 6, we would suggest to those that desire to have their numbers bound to send them to this office and have them executed in our usual manner, for the low price of 75 cents.

You can depend upon having your volumes well bound by sending them to this office, as they will be executed to conform in style with hundreds that we have bound for ourselves and the trade.

Notice.

We present a title page with this number, and our readers will know how to use it in binding their volumes. The Scientific American is held to be one of the best standard works for binding that is published.

Subscribers and Regularity of Mails.

Every subscriber would do well to try and get one or more in the same place, for the larger the package of papers, the greater is the chance of its regularity. A single paper is often mislaid, but it is not so with a larger package.

TO CORRESPONDENTS.

S. J. W., of Mich.—Your engine though somewhat ingenious would not, we are convinced, be worth much in practice, nor so far as we construe your invention, are there any new principles developed therein. Compressed air has been used with and without exposure to heat more than a century and a half ago, also alcohol and ether have been applied as media for boiling at a low temperature, we should advise you not to prosecute your invention, as the arrangement though probably new, embraces nothing but old and exploded theories.

J. D. L., of N. H.—As to the practicability of your invention, we cannot speak without the aid of experiment, but we incline to the opinion that it will work. That the plan is new we have no doubt so far as we understand it.

P. L. S., of Troy.—We approve of your arrangement, and think it may work well. You had better send us a small model, neatly made to represent the invention, and on its receipt we will advise you more fully in in regard to its patentability.

A. M., of Canada.—There are several excellent brick machines now in use in this country, but we are wholly unable to state where they are manufactured.

A. C. C., of Mass.—Your apparatus is believed to possess novelty sufficient to warrant an application for a patent. The engraving would cost six dollars.

D. H., of Ala.—We answered your letter on the 3d inst.

J. E. M., of Boston.—We are unable to give such information as you desire, not knowing of any such concern.

S. M., of Ohio.—We do not discover any patentable difference between your brake and the one illustrated in 41, Vol. 4, and you are advised not to spend money upon an application.

H. M. of O.—Several different contrivances have be exhibited to us for a self-acting gate to be used on railroads, and to be operated by the passing train of cars, but we are not aware that any have been adopted on any of the roads. We secured a patent on one of the devices for Mr. R. Coffin, of West Haverhill, Mass.

M. G. P., of Del.—Mr. Morse, the patentee for burning tan, saw-dust, etc., resides at Athol, Mass.

G. C. B., of Mass.—The application of Mr. G. is still pending at the Patent Office.

E. P. G., of Mass.—We consider your invention patentable, but could judge better upon that point if you would send us a model.

E. M. of Ind.—The Builder is published in London ot a high price. We do not know that a specimen number could be obtained here, without destroying a file of the work. We thank you for the compliment to the Scientific American.

W. A. C. of N. Y.—There seems to be novelty and utility in your contrivance for mortising machines, and we would think it best for you to bring us a model when you come on in October.

H. M., of Vt.—Your kind offices have been duly appreciated. We hope you may be able to procure the additional subscribers you speak of. You may send a model of the bevel plane and we will have an engraving made of it.

D. S. M., of ——.—Your device for balancing mill stones is believed to be new and patentable. We do not see anything about the offer upon which a patent coould be obtained. $1 credited for six months subscription.

L. R., of N. Y.—To disturb forces is not to come in contact with a power any more than to wake a person fraom sleep. You peruse a good explanation of this in Mr. Conger's article on Water Wheels, Nos. 51-2, Vol. 6.

S. C., of N. Y.—Yours will meet with attention.

D. L., of N. Y.—We know of no good feed for bees except the sugar syrup. Honey is somewhat different from cane sugar, as it contains glucose and an uncrystalizable sugar, but we do not know its quantitative analysis. The honey from sugar should granulate faster than other honey.

S. F., of N. Y.—Use a cylinder of 6 inches diameter, and 12 inches stroke. It will work more than two horse power, but so much the better. The power depends on the steam pressure.

Money received on account of Patent Office business for the week ending September 6 :

B. & W. of Conn., $10. D. T., of N. Y., $20. T. N. B., of —— $30. B. O. B., of N. Y., $25. J. H. B., of Conn., $15. J. S., of O., $30. J. B. S. H., of Mass., $50. A. K., of N. Y., $10. J. M. T., of N. Y. $60. G. & M., of Mich., $18. E. L. H., of N. Y., $50. P. M. & Co:, of N. H., $8. W. E. L., of N. Y., $20. C. J. G., of N. Y., $57. B. B., of Conn., $50. J. J. A., of N. Y., $10. R. Bro., & Co., of N. Y., $40.

Specifications and drawings of inventions belonging to parties with the following initials, have been forward to the Patent Office during the week ending September 6 :—

B. & W., of Conn. W. S., of R. I. R. V. D. G. o N. Y. T. M., of Pa. W. W. L., of Conn. B. O. B., of N. Y. M. & G. of Mich. F. C. G., of N. Y. R. Bro. & Co, of N. Y. J. J. A., of N. Y. D. B. of Conn. P. M. & H., of N. H.

New Edition of the Patent Laws.

We have just issued another edition of the American Patent Laws, which was delayed until after the adjournment of the last Congress, on account of an expected modification in them. The pamphlet contains not only the laws but all information touching the rules and regulations of the Patent Office We shall continue to furnish them for 12 1-2 cents per copy.

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Subscribers ordering books or pamphlets through us are particularly requested to remit sufficient to pay postage, or we cannot attend to their orders. We are obliged to pay from 10 to 50 cents every time a pamphlet or book is sent by us through the post, and the justice of our demand is made apparent.

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